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EXAMINER

MORRISON, THOMAS A

ART UNIT PAPER NUMBER

3653

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,603

Applicant(s)

SHIN ET AL.

Examiner

Thomas A. Morrison

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16-19 and 24-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-19 and 24-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1 and its dependent claims, claim 1 does not recite sufficient structural relationship between the claimed elements (e.g., the knock-up plate raising/lowering portion, the paper guide and the pickup roller), to understand how the recited function is performed. It is unclear what structure or structural relationship between the claimed elements allows the finger device portion to operate as claimed.

Also, it is noted that claim 1 recites that the finger device portion is **formed** on both sides of the frame. It is unclear what is meant by the use of the term "formed". Rather, it appears that the finger device portion is either disposed on or positioned on both sides of the frame.

Regarding claim 10, it is unclear what is meant by the recited "finger raising/lowering portion for **preventing the second finger portion from being blocked from further advancing by the other corner of the leading end** of the paper sheets when the paper guide is moved to guide the paper sheets with the knock-up plate being raised by the knock-up plate raising/lowering portion." (emphasis added).

Claim 13 recites the limitation "the side of each type of the paper sheets" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 16-19 and 24-31, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,772,007 (Kashimura). In particular, the Kashimura patent discloses all of the limitations of claims 1-5, 14-22 and 24-31.

Regarding claim 1, Figs. 13-15 show a paper feeding apparatus of an image forming apparatus, the paper feeding apparatus including a frame (including 202) that receives a plurality of paper sheets thereon, a knock-up plate (207) movably mounted on the frame (including 202) that aligns the paper sheets, and a pickup roller (205) that feeds the paper sheets into the image forming apparatus, the paper feeding apparatus comprising a paper setting unit,

wherein the paper setting unit comprises

a knock-up plate raising/lowering portion (211) that raises and lowers the knock-up plate (207) with respect to the pickup roller (205),

a paper guide (222) slidably formed on the knock-up plate (207) to guide the paper sheets in accordance with a size of the paper sheets, and

a finger device portion (including 224 and 224) operated by the knock-up plate raising/lowering portion (211) and the paper guide (222), the finger portion being formed on both sides of the frame (including 202) so as to press both corners of the leading end of the paper sheets when the topmost paper sheet is picked up by the pickup roller (205), thereby causing the papers to be separated and fed sheet by sheet. When the knock-up plate raising/lowering portion (211) is operated, the knockup plate is also operated, which in turn, operates the finger device portion (including 224 and 224). Thus, the finger device portion (including 224 and 224) is operated by the knock-up plate raising/lowering portion (211). Also, operation (e.g., movement) of the guide (222) causes the upper element (224) of the finger device portion in Fig. 15 to operate (e.g., to move). Thus, the finger device portion is also operated by the guide (222). The finger device portion (including 224 and 224) is formed on both sides (upper and lower sides shown in Fig. 15) of the frame (including 202). Elements (224 and 224) also press the corners of the paper sheets, as claimed. Thus, all of the limitations are met.

Regarding claim 2, Figs. 13-15 show that the finger device portion (including 224 and 224) has a first finger portion (lower 224 in Fig. 15) formed on one side of the frame (including 202) with respect to the knock-up plate raising/lowering portion (211) to press one corner of the leading end of the paper sheets; and

a second finger portion (upper 224 in Fig. 15) formed on the other side of the frame (including 202) with respect to the paper guide (222) to press the other corner of the leading end of the paper sheets.

Regarding claim 3, Figs. 13-15 show that the first finger portion (lower 224) further comprises a first operating lever (221) disposed on the frame (including 202) to move toward or spaced away from the knock-up plate (207) when the knock-up plate (207) is raised or lowered by the knock-up plate raising/lowering portion (211); and

a first resilient returning member (210) disposed between the frame (including 202) and the first operating lever (221) to return the operating lever (221) towards the knock-up plate (207) when the knock-up plate (207) is raised by the knock-up plate raising/lowering portion (211). In particular, the spring (210) pushes the knock-up plate (207), which then causes the operating lever (221) to return toward the knock-up plate (207).

Regarding claim 4, Fig. 14 shows that the first operating lever (221) has a first hinge portion (220) rotatably supported on the frame (including 202);

a first claw (224) formed to press one corner of the leading end of the one paper; and

a first operating member (225) formed in a vicinity of the first hinge portion (220) to move the first lever close to or away from the knock-up plate (207) when the knock-up plate (207) is raised or lowered by the knock-up plate raising/lowering portion (211).

Regarding claim 5, Figs. 13-15 show that the first resilient returning member (210) is a resilient spring arranged between the frame (including 202) and the first operating lever (221).

Regarding claim 16, Figs. 13-15 show a paper feeding apparatus of an image forming apparatus having a frame (including 202), a knock-up plate (207) movably mounted on the frame (including 202), and a pickup roller (205) for picking up a sheet of paper arranged in a stack of sheets of paper disposed on the knock-up plate (207), including a paper setting unit,

wherein the paper setting unit has

a knock-up plate raising/lowering portion (211) for raising and lowering the knock-up plate (207) with respect to the pickup roller (205),

a first finger device (including 216 and 218) disposed on the knock-up plate raising/lowering portion (211) to contact a first end (i.e., one of the 4 sides of the stack) of the paper,

a paper guide (222) slidably disposed on the knock-up plate (207) to guide the sheet of paper in accordance with a paper size, and

a second finger device portion (223) movably disposed on the paper guide (222) to contact a second end (i.e., another one of the 4 sides of the stack) of the sheet of paper.

Regarding claim 17, Figs. 13-15 show that the first finger device (including 216 and 218) is disposed opposite to the second finger device (223) with respect to the sheet of paper.

Regarding claim 18, Figs. 13-15 show that the frame (including 202) has a side on which the knock-up plate raising/lowering portion (211) is rotatably disposed, and the paper guide (222) moves toward or away from the side according to the size of the sheet of paper.

Regarding claim 19, Figs. 13-15 show that the first finger device (including 216 and 218) moves away from the sheet of paper when the knock-up plate raising/lowering portion (211) raises with respect to the knock-up plate (207).

Regarding claim 24, Figs. 13-15 show a paper feeding apparatus of an image forming apparatus having a frame (including 202), a knock-up plate (207) movably mounted on the frame (including 202), and a pickup roller (205) picking up a sheet of paper disposed on the knock-up plate (207), the paper feeding apparatus having

a first finger device (lower 224 in Fig. 15) movably disposed on a first portion of the knock-up plate (207) to contact a first end (i.e., one of the 4 sides of the stack) of the paper; and

a second finger device (upper 224 in Fig. 15) movably disposed on a second portion of the knock-up plate (207) to contact a second end (i.e., another one of the 4 sides of the stack) of the paper.

Regarding claim 25, Figs. 13-15 show that the first and second finger devices (upper 224 and lower 224 in Fig. 15) move independently from each other.

Regarding claim 26, Figs. 13-15 show that the knock-up plate (207) has first and second sides disposed opposite to each other with respect to a paper feeding direction.

Regarding claim 27, Figs. 13-15 show a knock-up plate raising/lowering portion (211) moving with respect to the frame (including 202) to raise and lower the knock-up plate (207) with respect to the pickup roller (205).

Regarding claim 28, Figs. 13-15 show that the first finger device (lower 224 in Fig. 15) moves according to a movement of the knock-up plate raising/lowering portion (211).

Regarding claim 29, Figs. 13-15 show a paper guide (222) slidably disposed on the knock-up plate (207) to move toward and away from the knock-up plate raising/lowering portion (211) according to a size of the paper disposed between the paper guide (222) and a side of the knock-up plate (207).

Regarding claim 30, Figs. 13-15 show that the knock-up plate raising/lowering portion (211) moves in a first direction, and the paper guide (222) moves in a second direction perpendicular to the first direction.

Regarding claim 31, Figs. 13-15 show that the first finger device (lower 224 in Fig. 15) moves in the first direction, and the second finger device (upper 224 in Fig. 15) moves in the first and second directions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Kashimura patent as applied to claim 2 above, and further in view of U.S. Patent No. 5,615,873 (Kobayashi et al.). With regard to claim 6, the Kashimura patent shows that the second finger portion (upper 224 in Fig. 15) has a second operating lever (223) disposed on the paper guide (222) to space away from the knock-up plate (207) when the knock-up plate (207) is spaced away from the pickup roller (205) by a predetermined distance, but the Kashimura patent does not specifically show a second resilient returning member, as claimed.

Figs. 12-13 of the Kobayashi et al. patent show that it is well known to provide a resilient returning member (246) between a paper guide (near 220) and an operating lever (241) to ensure that the operating lever (241) is returned towards a knock-up plate (above 220) when the knock-up plate is raised to a vicinity of a pickup roller (above 241). It would have been obvious to one of ordinary skill in that art at the time of the invention, to provide the second operating lever (223) of Kashimura with a return member, in order to ensure that the second operating lever gets returned in the

direction of the knock-up plate of Kashimura when the knock-up plate is raised, as shown in the Kobayashi et al. patent.

Regarding claim 7, Figs. 13-15 of the Kashimura patent show that the second operating lever (223) has a second hinge portion (220) hingedly supporting the second operating lever on to the paper guide (222);

a second claw (near 224) formed to press the other corner of the leading end of the paper sheets; and

a second operating member (225) formed in the vicinity of the second hinge portion (220) to be spaced at a second predetermined distance from the frame (including 202) so as to allow the second operating member (225) to be positioned at a wider gap with the knock-up plate (207) when the knock-up plate (207) is spaced away from the pickup roller (205), the wider gap being widened by a distance by which the knock-up plate (207) is spaced away from the pickup roller (205).

Regarding claim 9, Figs. 12-13 of the Kobayashi et al. patent show that the second resilient returning member (246) is a tension spring (246) secured between an end of an operating member (241) and a paper guide (near 220). Thus, providing such resilient returning member in the environment of the Kashimura patent will result in the resilient return member being secured between the end of the operating member and the paper guide of Kashimura.

Response to Arguments

4. Applicant's arguments filed September 7, 2005 have been fully considered but they are not persuasive. Applicant argues that in contrast to amended claim 1, Kashimura discloses that the separating pawls 224 and 224 are operated from one side of the frame by the lever 211 as is shown in Figures 13-15. In contrast to amended claim 1, the configuration disclosed in Kashimura is arranged only with respect to one side of the leading end of the paper, so the paper may be skewed. Amended claim 1 recites a finger device portion operated on both sides of the frame.

In response, it is noted that amended claim 1 of the instant application recites that the finger device portion is **formed** on both sides of the frame, but does not require that the finger device portion be operated on both sides of the frame. In any event, Figs. 13-15 show that the knock-up plate raising/lowering portion (211) operates the knock-up plate (207), which then operates an element (224) located on an upper side of the frame (including 202) in Fig. 15 and also operates an element (224) located on a lower side of the frame (including 202) in Fig. 15. See also column 8, lines 35-38. As such, even though claim 1 does not require operation of the finger device portion on both sides of the frame, Fig. 15 of Kashimura discloses such operation.

With regard to claim 16, applicant argues that in contrast to amended claim 16, Kashimura discloses that the separating pawls 224 and 224 are operated from one side of the frame by the lever 211 as is shown in Figures 13-15. In contrast to amended claim 16, the configuration disclosed in Kashimura is arranged only with respect to one

side of the leading end of the paper, so the paper may be skewed. Amended claim 16 recites two separate finger device portions operated on both sides of the frame.

In response, it is first noted that the recited first finger device of claim 16 has been rejected in view of elements 216 and 218 of Kashimura, not element 224. The recited second finger device portion of claim 16 was rejected in view of element 223 of Kashimura. Fig. 15 shows that the first finger device (including 216 and 218) contacts a first end of the paper (i.e., 218 contacts one of the four sides of the stack), while the second finger device (223) contacts a second end of the paper (i.e., 223 contacts another one of the 4 sides of the stack).

With regard to claim 24, applicant argues that in contrast to claim 24, the configuration disclosed in Kashimura is arranged only with respect to one side of the leading end of the paper, so the paper may be skewed. Claim 24 recites two separate finger device portions disposed on separate sides of the frame.

In response, it is noted that claim 24 recites first and second finger devices disposed on first and second portions of a **knock-up plate**. Fig. 15 of Kashimura clearly shows a first finger device (upper 224 in Fig. 15) located on a first portion of the knock-up plate (207) and a second finger device (lower 224 in Fig. 15) located on a second portion of the knock-up plate (207), as claimed.

With regard to claims 6, 7 and 9, applicant basically refers to the above arguments and also argues that claims 6, 7 and 9 are patentable because they recite that a first finger portion is formed on one side of the frame with respect to the knock-up plate raising/lowering portion to press one corner of the leading end of the paper sheets;

and a second finger portion is formed on the other side of the frame with respect to the paper guide to press the other corner of the leading end of the paper sheets. In response, it is noted that these limitations are shown in Figs. 13-15 of Kashimura. Namely, lower element 224 shown in Fig. 15 of Kashimura reads on the recited first finger portion, and upper element 224 shown in Fig. 15 reads on the second finger portion.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. There is insufficient structure recited in claim 1 to understand what structure performs the recited function. As such, no clear determination can be made as to the allowability of claims 8 and 10-13.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Walsh can be reached on (571) 272-6944. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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